# Semi-mechanized Felling and Debarking Operations in Farm Forestry Plantations of Casuarina

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## Abstract

The Tamil Nadu Newsprint and Papers Limited (TNPL) requires about 1800 MT of pulp wood per day. Traditionally, felling and debarking operations in plantations are carried out by using manual labour by the farmers and paper mills in India. But recent factors like increased demand for pulpwood and shortage of labour force has made manual harvesting of casuarinas plantations difficult. Currently TNPL requires a minimum of 2000 workers per day for felling and debarking operations. Using Casuarina wood with bark for papermaking results in higher chemical consumption for cooking and bleaching of pulp leading to increased pollution load in effluents discharge apart from increasing the cost of paper production. If debarked wood is used these problems can be managed and in addition the entry of the Non Process Elements (NPE) into the paper making process can be reduced particularly in the recovery cycle. To improve the quality, productivity and uniformity of output, removal of bark from the wood is necessary. To minimize the labour requirement for felling and debarking and to use more of debarked casuarina pulpwood, TNPL carried out semi-mechanized felling operations in farm forestry plantation sites by using petrol power chainsaws and debarking at mill site with the help of rotor type debarker machines imported from china. The results indicated that the manpower requirement is reduced by about 52 per cent in mechanical harvesting and debarking compared to felling and debarking operations by manual labour and the cost of felling and debarking is less by about 20 per cent in semi mechanized harvesting. Based on the evaluation studies, TNPL is implementing semi mechanized felling at plantations and mechanized debarking at mill site.